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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,719	11/26/2003	Thomas Herget	AXM-009.3 US	4255

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LEON R. YANKWICH
YANKWICH & ASSOCIATES
201 BROADWAY
CAMBRIDGE, MA 02139

EXAMINER	
LI, BAO Q	

ART UNIT	PAPER NUMBER
1648	

DATE MAILED: 05/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/723,719	HERGET ET AL.	
	Examiner	Art Unit	
	Bao Qun Li	1648	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 March 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-35* is/are pending in the application.

4a) Of the above claim(s) *1-3 and 15-35* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *4-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☒ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 10,342,054.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This is to acknowledge the amendment filed on 03/02/2006. Claims 1-35 are pending. The claims 21-36 have bee renumbered as 20-35.

Election/Restrictions

1. Applicant's election with traverse of IV, claims 4-14 in the scope of all trans-retinoid and selenium salt in the reply filed on 03/02/2006 is acknowledged. The traversal is on the ground(s) that there is common technical feature sheared by all groups of invention, i.e. treating HCV by modulating gastrointestinal glutathione peroxidase (GI-GPx). Therefore, there is no burden to examine them all.

2. This argument is not persuasive. First, a common technical feature is not the standard of the US practice of restriction/election requirement. MPEP sections 8-6.4 and 808.01 provide that inventions are unrelated if they have different modes of operation, different functions or different effects of the methods. Here, groups I-III and V-XV are related to different methods using different operation modes and produce different biological effects as stated in the previous Office Action. Therefore, they all have different modes of operations and different biological effects.

3. The requirement is still deemed proper and is therefore made FINAL. Claims 4-14 in the scope of trans-retinoid and selenium salt are considered before the examiner.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 4-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. In the instant case, the term "at least partial" in claims 4-10 is a relative term, which renders the claim indefinite. The term "partial" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably appraised of the scope of the invention. Applicants are reminded

that the use of relative word of "partial is prohibited by MPEP 2173.05(b), which requires relative term language to have some clarification in the specification that would allow one skilled in the art to understand what is claimed. However, the specification does not provide a range of values or endpoints that clarify what "partially" referred to. Therefore, claims 4-10 are considered indefinite. This affects the dependent claims 11-14.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 4-8, 10-14 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for observation of low GI-PGx is correlated with low HCV RNA in a cell culture system, does not reasonably provide enablement for using any agent that can active the serum GI-PGx to prevent and treat HCV infection. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

9. The test of scope of the enablement is whether one skilled in the art could make and use the claimed invention from the disclosures in the application coupled with information known in the art would render undue experimentation (See United States v. Theketronic Inc., 8USPQ2d 1217 (fed Cir. 1988). Whether undue experimentation is required is not based upon a single factor but rather a conclusion reached by weighting many factors. Theses factors were outlined in Ex parte Forman, 230 USPQ 546 (Bd. Pat. App. & Inter. 1986) and again in re Wands, 8USPQ2d 1400 (Fed. Cir. 1988). These factors include the following: (1). Nature of the invention, (2) State of art, (30 Scope of the claims, (4). Working examiner in the specification, (5). Adequate guidance provided in the specification, (6). Level of skill in the art, (7). Unpredictability of the field of invention.

10. The claimed invention is drawn to a method for using an agent that is able to active the GI-GPx to treat HCV infection, preferably using a composition comprising Trans-retinoid and

selenium salt. However, the scope of the claims read on using any or such agent to prevent HCV infection.

11. Regarding to the prevention of HCV infection, the state of art teaches that a development of HCV vaccine for preventing HCV infection is extremely difficulty and unpredictable because most of the HCV infection are asymptomatic that makes it hard to assess any effective remedy in the clinic. Secondly, a prevention of an infectious disease requires an individual has an active immune response to a neutralizing antigen of the infectious pathogen. In the case of HCV, there is no effective neutralizing antigen of HCV has been found yet so far because the heterogenecity and frequent mutation of the HCV genome. The state of art also teach that in order to prove the efficacy of the HCV vaccine, a large primates, such as chimpanzees, but not just small animal models are required (see detail discussion by Hsu et al. Clinics in Liver disease 1999, Vol. 3, pp. 901-915). Moreover, regarding to the treatment of HCV, it is also very unpredictably for approving an agent for being able to effectively treat the quansispecies of HCV due to the HCV frequent mutation to any therapeutic regiment. For example, HCV is able to grow an resistant to INF and/or rabivirin treatment as evidenced by Naka et al. (J. Gene Virol. 2005, Vol. 86, pp. 2787-2792), Sumpter et al. (J. Virol. 2004, Vol. 78, No. 21, pp. 11591-11604) and Vuillermoz et al. (J. Med. Virol. 2004, Vol. 74, pp. 41-53). Therefore, the level of skill in the art to develop a therapeutic agent for preventing and treating HCV is very high.

12. The specification of the present applicant only present that elevated PI-GPx is correlated with low level of HCV RNA in a cell culture system. There is no any animal model for testing whether a high level of the serum GI-GPx can prevent HCV if the animal is challenged with HCV or low down the HCV replication if the animal is already infected with HCV. Therefore, The specification fails to provide adequate guidance and sufficient evidence to support the broad scope of the claimed invention.

13. The invention involves one of the most complex and unpredictable fields of HCV treatment as well as prevention; a significant hurdle remains to be overcome in order for the skilled artisan to practice successful the claimed invention.

14. Therefore, given the above analysis of the factors which the courts have determined are critical in asserting whether a claimed invention is enabled, it must be considered that the skilled

artisan would have to conduct undue and excessive experimentation in order to practice the claimed invention.

Claim Rejections - 35 USC § 102

15. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

16. Claims 4-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Look et al. (Antiviral Research 1999, Vol. 43, pp. 113-122).

17. Claims 4-14 are drawn to a method for treating HCV comprising administering an agent that stimulates the expression of GI-GPX, wherein expression is stimulated by increasing GI-GPX transcription and/or translation. The specification provides that IFN and selenium are agents that are capable of stimulating GI-GPX expression (p. 9, line 18; and Fig. 4a). Accordingly, Claim 9 reads on administering 1FN and or selenium to an HCV-infected individual. Look d al. disclose administering a combination therapy to patients infected with HCV wherein the combination comprises IFN and selenium (p. 1 15). Based on this disclosure, Look d a1. anticipate the subject matter in the claims.

18. Claims 9 and 11 are rejected under 35 U.S.C. 102(b) as being anticipate by Rumin et al, (WO 99/67362A1).

19. Claims 9 and 11 are drawn to a method for treating HCV infection in cell culture comprising administering an agent that stimulates the expression of GI-GPX, wherein the agent selected from the combination of retinoid and seletium salt. Rumin et al. disclose administering selenium and/or retinoic acid to HCV infected cells (see e.g. abstract, pages 4-6, 8-9, claims 1-3 and 13-14). Based on this disclosure, Rumin et al. anticipate the subject matter of claims 9 and 11.

Conclusion

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bao Qun Li whose telephone number is 571-272-0904. The examiner can normally be reached on 7:00 am to 3:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Campell Bruce can be reached on 571-272-0974. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BAOQUN LI, Ph.D.
PATENT EXAMINER

Bao Qun Li
05/01/2006